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# The New Joint Capabilities Integration Development System (JCIDS) and its potential impacts upon Defense Program Managers



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**The New Joint Capabilities Integration Development System  
(JCIDS) and Its Potential Impacts upon Defense Program  
Managers**

**30 December 2004**

**by**

**David F. Matthews, Senior Lecturer,  
Graduate School of Business & Public Policy**

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Prepared for: Naval Postgraduate School, Monterey, California 93943



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# Abstract

The June 2003 release of the radically-revised CJCSI 3170.01C and CJCSM 3170.01 promulgating the new Joint Capabilities Integration Development System (JCIDS) literally turned the legacy Service-initiated Requirements Generation System (RGS) upside down. The decades-old “threat-driven,” “bottom-up” development process of warfare-materiel requirements was summarily replaced by a “revolutionary,” “capabilities-driven,” “top-down” process. The author provides an analysis, from a Program Manager’s (PM) perspective, of the potential impacts of these changes upon the acquisition community in four distinct areas: Continuity with Service legacy requirements generation expertise, PM management challenges when other PMs are responsible for supplying critical subsystems and components that will enable satisfaction of Key Performance Parameters, Total Ownership Cost implications of deploying multiple, low-density materiel configurations, and potential disconnections between Presidential Budget Requests and Congressional enactment.

**Key Words:** Project Management, Program Management, JCIDS, Requirements Generation



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## About the Author

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Disclaimer: The views represented in this report are those of the author and do not reflect the official policy position of the Navy, the Department of Defense, or the Federal Government.





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# I. Introduction

The June 2003 release of the radically-revised CJCSI 3170.01C and CJCSM 3170.01 promulgating the new Joint Capabilities Integration Development System (JCIDS) literally turned the legacy Requirements Generation System (RGS) upside down. The decades-old “threat-driven,” “bottom-up” development process of warfare-materiel requirements was summarily replaced by a “revolutionary,” “capabilities-driven,” “top-down” process.

Historically, the Service-unique requirements development processes and organizations and their entrenched institutional memories had been forcibly altered, with the imposition of the Joint Requirements Oversight Council (JROC) and CINC participation, by the Defense Reorganization Act of 1986 (hereafter cited as Goldwater-Nichols). Then, 17 years later, this Act was suddenly superseded by a new and rapidly-evolving DOD/JCS-driven process and organization.

Such a drastic change must have had very complex origins; and indeed it did. Chapter II will thoroughly explore this highly-political metamorphosis.

Chapter III will provide an “executive summary” of JCIDS (including the March 2004 Change 1) and highlight significant changes from the legacy system. It will also emphasize the nearly-concurrent changes made to the DoD 5000 series governing acquisition management that were either forced by, or made in correlation with, the JCIDS “revolution.”

Such change has caused many to be concerned that JCIDS may be trying to resolve legacy RGS problems and disconnections in a manner that may potentially be injecting new, equally-disruptive deficiencies. Chapter IV will then provide an analysis, from a Program Manager’s (PM) perspective, of the potential impacts of these changes upon the acquisition community.

Chapter V will present conclusions and offer recommendations for possible adjustments to JCIDS.



## II. Historical Background

Modern American military history is replete with examples of weapon systems that proved to be either inadequate or inferior when confronted with serious hostilities. There was a complex spectrum of reasons for these situations, ranging from failures to recognize the militarily-significant applications of emerging technologies, to faulty intelligence and threat identification, to inadequate developmental and operational testing; the early WW-II Mark XIV Submarine Torpedo fiasco is a very painful example of the latter.

That war also saw the rise of joint and combined operations and the formation of the Joint Chiefs of Staff (JCS). Yet, equipment developed parochially by one of the two Services frequently failed to adequately inter-operate with the other's in-joint systems. Early WW-II problems with performing amphibious operations and obtaining effective Naval gunfire support for the Marines and Army provide vivid examples. Various attempts were made at two-Service and, after 1947, three-Service cooperation in requirements generation. These efforts were judged by many to have been largely unproductive.<sup>1</sup>

Behind this lack of successful cooperation existed a long history of Service parochialism, arrogance, and competitive in-fighting. The contention between the fledgling "B-36 Air Force" versus the "carrier admirals" in 1948-49 is a vicious case-in-point. The inter-Service conflicts and myriad Congressional interferences literally drove the first Secretary of Defense (and former Secretary of the Navy), James Forrestal, to suicide.

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<sup>1</sup> For instance, only in this decade has a requirement to extend the organic Army and Marine Corps artillery fire support system to Naval surface vessels—thus eliminating the decades-old requirement for a dedicated Air-Naval Gunfire Liaison Company (ANGLICO) element to accompany all ground combat commanders—been approved, funded, and nearly completed; they will shortly be provided with a single, common "call for indirect fire support" system for the first time ever.



Presidents Truman and Eisenhower, and their Secretaries of Defense, vainly struggled with the Services and many in Congress to empower the Department of Defense and to inculcate “jointness” and improved inter-Service cooperation. Despite the Key West Agreement of 1947, the still-autonomous Services continued to try to “poach” other Service’s roles and missions. What was “good for the Service” far transcended what was “good for the DoD.”

President Eisenhower tried to deal with this Service intransigence in his national security initiatives that resulted in the Defense Reorganization Act of 1958. He tried to strengthen the power of the Secretary of Defense, the Chairman of the JCS, and the Unified Commanders (CINCs). He felt strengthening these positions would increase the integration of the Services in support of JCS strategic plans and the Unified CINCs. Congress, however, was not ready for a major transformation and passed a diluted bill that initiated few substantial changes.

Later, President Kennedy empowered Secretary McNamara to reform the Pentagon’s requirements generation and resource allocation/management processes by both introducing the “Whiz Kids” with their systems-effectiveness analysis and by imposing a formal Planning, Programming, and Budgeting System (PPBS) for the DoD. Although some limited further joint rationalization occurred, Kennedy’s assassination and President Johnson’s subsequent focus on “The Great Society,” and increasingly on Viet Nam, basically acquiesced the administration to the DoD status quo.

President Nixon was likewise enmeshed in Viet Nam and, subsequently, his very survival in office. President Ford served only two years, and President Carter, although a former Regular Navy Officer, had other priorities. Then came the Iranian hostage-taking and the joint Service “Desert One” failure; these led to the beginning of a transfer in the impetus for DoD/JCS reform from the Executive Branch to the dissatisfied and increasingly-concerned Legislative. As the Regan administration began their sweeping defense build-up, the 1983 Beirut Marine Barracks bombing tragedy occurred; likewise, the disjointed Grenada Invasion again revealed serious shortcomings in the Services’ ability to act effectively and unselfishly in the conduct of joint operations.



Many in Congress, already concerned about the effects of Service parochialism, saw these incidents as evidence that the DoD required major reforms in its capability to equip, organize, and execute joint operations in the defense of the country. Therefore, they called for a major reorganization. Several critics asserted that Service autonomy was going to have to be sacrificed in the interests of improved effectiveness in the joint arena.

Late 1983 saw the commencement of a series of hearings in both houses of Congress that would culminate three years later in the landmark Goldwater-Nichols legislation (the Defense Reorganization Act of 1986). During the latter part of this period, in July 1985, President Regan chartered the Packard Commission to investigate the DoD's procedures and activities for the procurement of military equipment and materiel. The commission staff, as well as some members of Congress, directly coordinated their investigations with the inquiries of the relevant House and Senate committees and their staffs.

The work of both bodies significantly parallel and overlap in the portions of the legislation and commission report that pertain to requirements generation and acquisition management. The Congressional emphasis on "jointness" in requirements generation dovetailed tightly into the Packard Commission's recommendations on acquisition management reform.

Over vehement Service protests, particularly those of the Navy and its die-hard coterie of Congressional supporters, Goldwater-Nichols established the permanent position of Vice Chairman of the Joint Chiefs of Staff (VCJCS). Among the new position's specified duties was the responsibility to preside as the Chairman of the newly-created Joint Requirements Oversight Council (JROC) which consisted of all of the Service Vice Chiefs of Staff and the Assistant Commandant of the Marine Corps and which was facilitated by a small, permanent staff. The JROC's charter was, with input from the Unified Commands' CINCs, to oversee the materiel requirements documentation validation process for all Major Defense Acquisition Programs (MDAPs) [classified by the DoD as Acquisition Category I (ACAT I)] and to authenticate that the



proposed capability was required, not duplicative of another Service's program, and that the submitted documentation adequately addressed all DoD/JCS-level joint-warfare and inter-operability concerns.

The second new major VCJCS acquisition-related duty was to serve concurrently as Vice Chairman of the newly-created Defense Acquisition Board (DAB) which was chaired by the also newly-created Defense Acquisition Executive (DAE). The DAB, an outgrowth from the former Defense Systems Acquisition Review Council (DSARC), had been created to advise the DAE—as the DoD Milestone Decision Authority (MDA)—concerning the readiness of developmental programs to advance into the next acquisition-management phase. These two principal duties assigned to the office of the VCJCS promised significantly increased DoD/JCS influence over the Service-initiated requirements generation and Service-managed acquisition-management processes.

Goldwater-Nichols also promulgated a major change in the Services' acquisition management systems. Although the 1976 OMB Circular A-109 (which established Executive Branch acquisition management policy) had required all agencies to establish short, clear lines of acquisition responsibility, authority, and accountability, as of 1986, the DoD had still not institutionalized this policy. Therefore, embracing a Packard Commission recommendation in order to assist the DoD's acquisition management policy, the legislation required the adoption of what has become known as the "PEO System." In this system, lines of acquisition management authority and oversight flowed from a Service-chartered Program Manager (PM) to a commodity-oriented Program Executive Officer (PEO) overseeing a cluster of related PMs, to a Service Acquisition Executive (SAE), and finally to the DAE. The existing Service Hardware Systems Commands (HSCs) were to provide support to the PMs on a matrix basis and be reimbursed by program funds which, in another major change, would now flow through the PEO chain.

The PEO System, once fully implemented, constituted a significant improvement in acquisition management and accountability; it was and still is considered a success. However, the inauguration of the JROC Requirements Oversight "System" proved to be



more difficult and controversial. ADM William A. “Bill” Owens was appointed as the third VJCS and, therefore, Chairman of the JROC. Press reports from the period relate that the JROC meetings were characterized by rancor and parochial in-fighting. These reports likewise suggest ADM Owens became increasingly frustrated by Service intransigence and his inability to orchestrate a joint consensus on many issues which, in order to achieve improved commonality and interoperability, required serious Service concessions and compromises. Sandra Irwin, in *National Defense*, states ADM Owens:

created what he called the JWCA, or joint warfighting capabilities assessment, that was designed to more closely match the needs of joint commanders with the services’ procurement priorities. The JWCA didn’t achieve the expected results, officials claim, because it was a “bottom-up” review process that began at service level and ended at the JROC.<sup>2</sup>

Press reports asserted that both these prolonged frustrations, and severe Service criticism of his efforts, were the principal reasons that he declined nomination for a second two-year term as VJCS.<sup>3</sup> Yet, Owens wasn’t the reason the JWCA didn’t survive.:

But the real reason why JWCA was only a passing fad—and why JCIDS may encounter a similar fate—is that ultimately the services have ownership of their programs and the responsibility to justify them before Congress. The Navy’s littoral combat ship [LCS] program is a particularly relevant illustration of the challenge that the services face in getting major programs off the ground. While LCS critics on Capitol Hill charge that the Navy has done a poor job validating and articulating the need for the ship, the program passed the JCIDS review with flying colors and then some.

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<sup>2</sup> Sandra Irwin, “Pentagon Takes Another Shot at Enforcing Joint Thinking,” *National Defense* (AUG 04): quoted in the *Early Bird*, 28 JUL 04

<sup>3</sup> Note: The foreword to *Victory on the Potomac* relates the extreme rancor that the JCS members personally expressed at Senators Goldwater and Nunn during a 1986 confrontation in the “Tank;” Goldwater at one point responded by slamming his cane on the table! It is no wonder the JWCA was doomed to failure.



At the very least [...]JCIDS will serve as a valuable forum to debate the relevance of major programs in a joint context, which certainly has merit. But some still wonder about a process that apparently ignores the long-standing relationship the services have with the movers and shakers on Capitol Hill.<sup>4</sup>

Subsequent Administrations shared the same frustrations with the RGS. These frustrations culminated in the current Administration with Defense Secretary Rumsfeld's initiative to radically transform the legacy system. The initiative grew out of studies conducted early in the Bush Administration aimed at improving the responsiveness of the acquisition management system. These studies concluded that the RGS was also part of the low-responsiveness problem. The Service-initiated "bottom-up" system was not conducive to commonality, inter-operability, and "jointness." Therefore, Secretary Rumsfeld decided to direct the JCS to take responsibility for initiating materiel requirements from the top-down to ensure that requirements were "born joint."

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<sup>4</sup> Sandra Irwin, "Pentagon Takes Another Shot at Enforcing Joint Thinking," *National Defense* (AUG 04): quoted in the Early Bird, 28 JUL 04





### III. Joint Capabilities Integration Development System (JCIDS)

The newly-released National Military Strategy (NMS), “A Strategy for Today; A Vision for Tomorrow,” clearly articulates the strategy and vision from which JCIDS was derived.

The Foreword highlights **protecting** the United States, **preventing** conflict, and **prevailing** against adversaries. The Chairman, USAF General Richard B. Myers, sets forth three priorities. The first is **winning the war on terrorism**, which will require “the full integration of all instruments of national power.” The second is enhancing our **ability to fight as a joint force**. He asserts, “Joint teamwork is an integral part of our culture and focus as we develop leaders, organizations, *systems*, and doctrine” (italics added). The third is **transforming the Armed Forces by** ensuring that “US forces emerge from the struggle against terrorism with our *joint force* fully prepared to meet future global challenges.”<sup>5</sup>

In Chapter V, **Joint Vision for Future Warfighting**, the NMS introduces the goal of **Full Spectrum Dominance** (FSD). It states:

FSD recognizes the need to integrate military activities with those of other government agencies, the importance of interoperability with allies and other partners, and the criticality of transforming in-stride. FSD will serve to strengthen the trust and confidence that exists among service components by acknowledging their interdependence and developing concepts that reduce gaps and seams among organizations. It requires a capabilities-based approach that balances near-term capabilities with longer-term requirements and incorporates a global perspective on military and strategic risk. [...] Along with technological solutions to improve joint Warfighting, we must also examine our doctrine,

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<sup>5</sup> National Military Strategy (NMS), “A Strategy for Today; A Vision for Tomorrow,” add more info to this citation. (emphasis added)



organizations, training systems, *materiel procurement* [...] to ensure military superiority. [...] Reducing lead times associated with research, development, and fielding of new capabilities must be a priority. Such actions are essential to an in-stride approach to transforming the Joint Force and executing concepts for future joint Warfighting. Research and development programs are equally important to FSD, providing a hedge against the more uncertain aspects of the security environment.<sup>6</sup>

Perhaps the best recent summary of JCIDS' intent and basic architecture can be found in an excerpt from an October 8, 2004 article from *Inside the Pentagon* that is quoted below. The unnamed author explains the system as follows:

The Joint Training FCB (Functional Capabilities Board) is the eighth such panel created by the Pentagon. The others cover command and control, battlespace awareness, force application, force protection, force management, focused logistics and network-centric operations. These activities are prevalent in the full range of missions the Defense Department carries out.

Each board plays a central role in crafting an array of capabilities for future warfighters under the Pentagon's year-old Joint Capabilities Integration and Development System, or JCIDS for short.

JCIDS, as spelled out in a revised Chairman of the Joint Chiefs of Staff Instruction 3170, was implemented to replace a defense-wide requirements generation system that was widely viewed as flawed because it did not adequately support efforts to field a more effective joint force (*Inside the Pentagon*, July 24, 2003, p3). This was a concern because military planners believe the services—and the equipment they use—must be able to work together seamlessly to defeat 21st-century threats.

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<sup>6</sup> Ibid., 20-21 (emphasis added).



To that end, the JCIDS process encourages interoperability at the earliest stages of program development—a proposal from one of the services to build a new weapon system, for instance, would be judged in large part on how it could contribute to joint warfighting, as opposed to just the needs of that service. Officials also will guard against unnecessary duplication of effort by the services, thereby promoting efficiency in the expenditure of DOD resources.

Much of the heavy work of vetting proposals to field new capabilities is the province of FCBs, which can include representatives from the Joint Staff, Office of the Secretary of Defense, the services and combatant commands. The boards support Pentagon decision-makers—including the Joint Requirements Oversight Council and the Joint Capabilities Board—in analyzing and prioritizing proposed warfighting requirements. Further, they will help identify shortfalls and gaps in existing or projected joint capabilities.

Here's how it works: Much of the activity that flows to the FCBs will be assigned by an official known as the JCIDS "gatekeeper." This person examines each capabilities proposal—perhaps in the form of an initial capabilities document, which replaced the mission need statements used under the old requirements generation system—to assess what the chairman's instruction calls "joint potential."

The gatekeeper then tags each proposal "JROC interest," "joint impact," or "independent." The designation determines who will be responsible for validating and approving the document—the JROC, an FCB or a DOD component. Certification requirements for interoperability and staffing distribution also are considered.

The JROC interest label applies to all acquisition category-1/1A (sic) programs, which already are subject to JROC oversight. Joint impact is applied to all ACAT-2 and below programs "where the concepts and/or systems associated with the document affect the joint force such that an expanded review is appropriate in order to ensure" the best solution for the joint warfighter, the



instruction states. The independent designation is intended for ACAT-2 and below programs that do not affect the joint force and do not require certifications, according to the instruction.

The gatekeeper also picks the lead FCB to handle analysis of a particular proposal.

FCBs also develop and update functional concepts that, along with strategic policy direction from OSD, guide decisions about capabilities proposals.”<sup>7</sup>

In addition to the concise explanation quoted above, CJCSI 3170.01D, 12 March 2004, provides the details concerning JCIDS and will not be repeated here. However, Figure 1 does graphically outline the process discussed above.

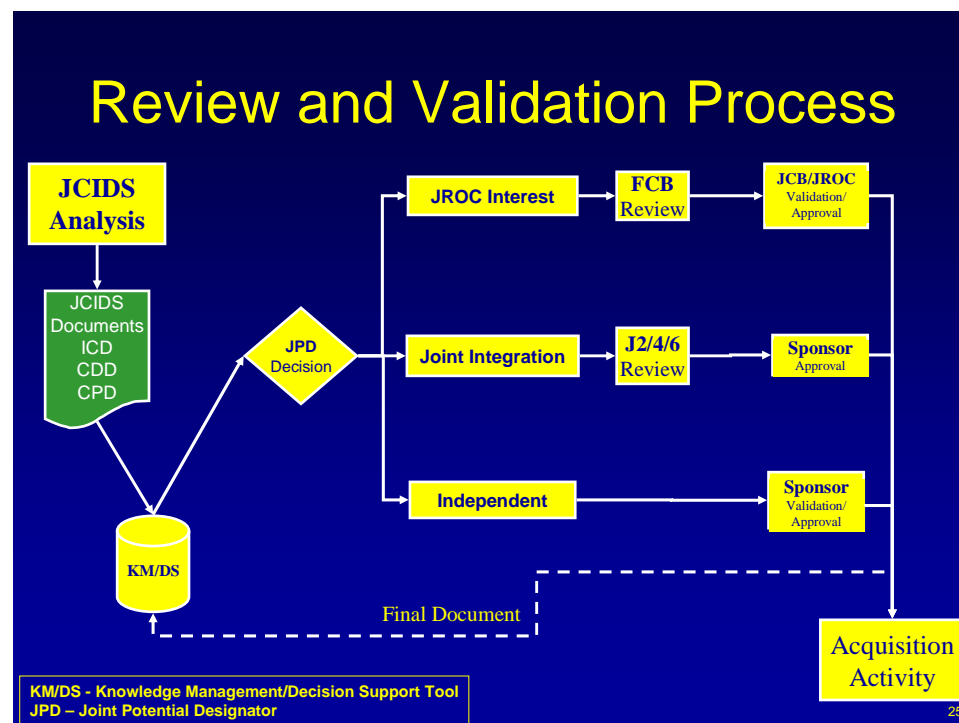


Figure 1. JCIDS Review and Validation Process (NPS Course MN3331)

JCIDS was developed concurrently with a major overhaul of the Acquisition Management System. Beginning in the closing years of the Clinton Administration, the

<sup>7</sup> “New JCIDS Functional Capabilities Board.” *Inside the Pentagon* (October 8, 2004): quoted in the *Early Bird* 08 NOV 04.



Acquisition Model started to significantly evolve. This evolution culminated in the May 2003 publication of a significantly revised DODD 5000.1 and DODI 5000.2. Publication of the initial version of the new CJCSI 3170.01 establishing JCIDS followed a month later. The details and implications of this JCIDS-inspired management model are thoroughly discussed in John T. Dillard's 2003 Report: "Centralized Control of Defense Acquisition Programs: A Comparative Review of the Framework from 1987–2003."



## IV. Analysis from the Program Manager's Perspective

*Note: This reviewer was Project Manager (PM) of a Major Defense Acquisition Program (MDAP) in the mid-1990's and has been teaching Materiel Acquisition and Program Management at the Naval Postgraduate School for over ten years. The following analysis is reflective of experience in the surface-to-surface rocket and guided missile commodity. It is also influenced by the experiences of former-PM colleagues and by feedback from former students currently serving in mainstream acquisition positions in the Navy, Marine Corps, Army, and the DoD.*

The first concern of this analysis is how the Pentagon-based JCIDS process is going to capture the institutional memory and lessons learned (some more than once) resident in the old RGS bureaucracy. How will the legacy knowledge and expertise (We tried that “good idea,” but it did not work because...) be preserved and accessed? The old shibboleth that the “devil’s in the details” is certainly applicable here, as is the axiom that “the project failed because we built the wrong thing...” Then, the inevitable question follows: Why did we build the “wrong thing?”, as does the answer: because “they” did not get the requirement “right.”

Ensuring that we “get the requirement right” is the core of this concern. Measures in the new acquisition management model emphasize achieving and demonstrating technological maturity prior to final commitment to a developmental program; lack of technological maturity has certainly been a major problem in many past programs. However, another major requirements problem that adversely affected the PM’s ability to meet his/her mandated Acquisition Program Baseline (APB)—the problem, of “requirements creep”—appears to have been institutionalized in JCIDS. The evolution of the specific requirement from the Initial Capabilities Document (ICD) to its codification in the Capabilities Development Document (CDD) to the “final” (for the first increment anyway) Capabilities Production Document (CPD), represents new ground for PMs. Under the legacy requirements and management systems, what is now the CDD (roughly the old ORD, but now occurring somewhat later in the



developmental cycle) “froze” the qualification to enable the PM to execute the Program Definition and Risk Reduction (PDRR) and Engineering and Manufacturing Development (EMD) phases with a stable requirement. Now, with the new CPD, the requirement actually “freezes” later on, somewhere between the Critical Design Review (CDR) and Milestone C, here commitment is made to Low-Rate Initial Production (LRIP). In addition, the CDR, where the design is “frozen,” now comes somewhat later in the developmental cycle, affording the PM less time to complete and extensively integrate and test the system; this decreased leeway for testing and integration potentially increases program risk.

The reasons for these changes are well-intended and have the laudable objective of deploying the latest technology to the warfighter. However, for every “pro” there is a “con.” Particularly, given the increasing software-intensity of major defense systems and the extensive integration testing inherently required for those technological systems, there is potentially more risk here than the framers of the new system may have realized because of the decreased time frame. Software integration testing is predominately serial and therefore schedule-intensive; one can not accurately forecast a final completion date until it actually arrives. Therefore, adequate schedule “management reserve” must be provided in order to avoid a baseline breach.

A second concern is that the Key Performance Parameters (KPP) under JCIDS will probably focus significantly more upon interoperability and “jointness” than they had in the past. The PM for a MDAP may have to increasingly rely upon other PMs outside of his PEO, or even Service, to provide key components and/or other critical subsystems to his higher-level system precisely on his schedule in order to meet his KPP thresholds. The March 12, 2004 version of CJCSI 3170.01D specifically highlights the mandated interdependencies of materiel developers. It states:

Potential solutions may include a family of systems (FoS) that take different approaches to filling the capability gap, each addressing operational considerations in a different way. Alternatively, the solution may require a system of systems (SoS) approach to fill a capability gap. The FoS and SoS



material solutions may also require systems delivered by multiple sponsors/materiel developers.<sup>8</sup>

In other words, the desired “jointness” of the Service inherently catalyzes materiel interdependency among them.

Another paragraph of the March 12, 2004 version stipulates that requirements documents “will comply with the formal instructions in CJCSI 3170.01B and incorporate the Interoperability/Net-Ready Key Performance Parameter (KPP) as required by reference g. The transition from the Interoperability KPP to the Net-Ready KPP is directed by the instructions in JROCM 236-03, 19 December 2003.”<sup>9</sup> The imposition of this Net-Ready KPP will further exacerbate the PM interdependency situation by requiring PM’s to develop unprogramed, newly-required interface capabilities with other PM’s systems.

With virtually no formal control over these supporting PMs, how can/will the system’s PM be held responsible/accountable? Will the Milestone Decision Authority (MDA) approve exit from or entrance into a phase in the event that these supporting PMs fail to meet their schedules, and thereby prevent the system PM from meeting some KPP? Will the JROC endorse a diminished-capability requirement for the initial increment, and will the MDA approve a rebaselined Evolutionary Acquisition Strategy that increases incrementalism? Will the Director of Operational Test and Evaluation (DOT&E) declare the less-capable initial-increment fully operationally effective and suitable?

The above concerns may eventually turn out to be somewhat overstated, but with both JCIDS and the complementing 5000 series being relatively immature in terms of application to real-world materiel development programs, considerable skepticism persists in the PM community. Only application of the new paradigms to actual

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<sup>8</sup> CJCSI 3170.01D, “Joint Capabilities Integration Development System,” March 12, 2004. 2 (Para 4c.)

<sup>9</sup> Ibid., 3 (Para 4 f.3).





programs and a thorough evaluation of their impacts will illustrate the extent and validity of these concerns.

A third concern with this new paradigm is that under the new Evolutionary Acquisition Strategy and the DoD-preferred “Spiral Development” method, the potential exists for a plethora of low densities of somewhat different configurations of major systems being serially deployed to the fleet. This would require a separately-tailored logistical support package for each discrete model. RADM (Ret) Don Eaton, holder of the Admiral Stanley Arthur NPS Logistics Chair, often recounts to his classes his experiences, when he was the senior logistical at the Naval Air Systems Command (NAVAIR), with aircraft carriers deployed with several different blocks of FA-18 aircraft. A portion of the logistics “footprint” for each block consisted of block-unique test equipment, spares, and sometimes even seaman ratings. Acquiring enough storage space for the aggregated “footprints” of all the FA-18s on board presented a considerable challenge. He described one instance where NAVAIR procured only 12 of one particular FA-18 block; then, when one aircraft was lost operationally, a single squadron had to support two different configurations in order to remain at full strength on deployments. RADM Eaton remains concerned that the new paradigm will inadvertently result in increased operation and maintenance (O&M) costs and possibly even require carrier design modifications in order to accommodate the multiplicity of unique models. Acquiring and maintaining a large range of relatively-expensive, but low-density support equipment and repair parts will preclude taking advantage of potential “economies of scale” and probably result in a significant increase in Total Ownership Costs (TOC).<sup>10</sup>

One option to address this problem is to retrofit legacy models to the current configuration, which would reduce O&S costs and enhance combat effectiveness, reliability, and operational availability. However, at least in the case of NAVAIR, this

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<sup>10</sup> Conversations with RADM (Ret) Eaton, 1994 to present.



has not been the historic norm; monetary resources required from the Procurement Appropriations would have to be diverted from the acquisition of brand-new aircraft.

A final concern revolves around funding. Under Title 10 U.S. Code, the Congress still appropriates directly to the Services, not to the DoD. For decades, the Congress has received the President's Budget and then decremented, pulsed-up, or even added programs in congruence with their parochial special interests. Therefore, the carefully-crafted R&D, Procurement, and MILCON decisions made in the JCS and the DoD that are reflected in the President's Budget are occasionally not realized in the annual Defense Authorization and Appropriation Acts. The Services have, in the past, publicly supported the President's Budget while concurrently working covertly behind the scenes with their respective major system contractor lobbyists to reverse on the Hill the very decisions that they lost through unfavorable DoD Program Budget Decisions (PBD).<sup>11</sup> The programs that become "bill-payers" to more fully fund these priority Service programs are in some cases those programs providing support to other Services. Rep. Aspen cited as examples reluctant Navy and Air Force support for Strategic Sea and Air Lift to deploy the Army.<sup>12</sup> PMs, dependent upon other-Service-funded components and/or subsystems in order to meet their KPPs may, therefore, find these programs decremented during Congressional enactment and suffer a baseline breach. In other words, jointness and across-the-board Service interoperability may prove to be more difficult to achieve than the visionary JCIDS framers anticipated.

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<sup>11</sup> This problem was so significant that when Senator William "Bill" Cohen became Dr. William Perry's successor in the late 90s, one of his very first acts was to circulate a memorandum to the Services emphatically emphasizing that there would be no inappropriate contacts with the Congress in contravention of the President's Budget!

<sup>12</sup> Representative Les Aspen of Wisconsin, when Chairman of the House Armed Services Committee, as quoted in "The Pentagon Power Game," PBS Video (1987).



## V. Conclusions and Recommendations

First, there has been a “revolution” in the requirements generation process that needs to avoid “throwing out the baby with the bathwater.” Legacy knowledge and experience needs to be carefully considered when formulating requirements in the JCIDS process. It is recommended that the JCS and Service staffs quickly act to take the necessary policy and bureaucratic steps to ensure JCIDS entities have institutionalized access to the legacy corporate memories and records of both the former Service RGS staffs and records on a real-time, or at least near real-time, basis. This would insure that all of the potential impacts and previously-learned lessons would be reviewed and considered in the formulation of all new JCIDS requirements documents.

Second, there is the issue of developmental PM dependence upon other PMs, over whom they have little or no control, for on-time delivery of crucial subsystems and components in order to meet their KPPs. It is recommended that a mandatory entry be established in the quarterly Defense Acquisition Executive Summary (DAES) report. This entry would identify and provide the status of a system for both the other-PM-managed systems that the reporting PM was depending on to achieve his/her KPPs; it would also include the status of any subsystems or components that the reporting PM was managing that were critical to some other PMs’ ability to meet his/her KPP requirements. Since the DAES report is reviewed and commented upon by the reporting PM’s PEO, Service Acquisition Executive (SAE), and subsequently, the Defense Acquisition Executive (DAE), this mandatory communicative entry would ensure that immediate visibility was given to any projected schedule and/or cost shortfalls in time to have them addressed (at whatever level where necessary) to effect their timely resolution.

Third, since it is clear that the new evolutionary materiel requirements and development system has enormous potential for increasing the operation and support cost components of Total Ownership Cost (TOC), the reduction of them needs to be



addressed during the early steps in the new system's engineering process. It is therefore recommended that the Services be directed to formulate both a comprehensive Logistics Support Strategy and a Master Configuration Management Plan, as well as a Cost as an Independent Variable (CAIV) analysis for each JCIDS requirements document. These plans could then be crafted to produce the lowest practical Total Ownership Cost (TOC) for the full lifecycle of the developmental system.

Finally, it is apparent that significant potential exists for the congress to "disconnect" carefully-balanced DoD JCIDS materiel program Research, Development, Test, and Evaluation (RDT&E) and Production budget requests during the enactment process. Therefore, it is recommended that the DoD clearly highlights, in its portion of the President's Budget, those RDT&E and Procurement programs that have critical interdependencies and which should be funded as a "package" to ensure that those programs can stay on their approved Acquisition Program Baselines (APB).



## VI. List of References

CJCSI 3170.01C. “Joint Capabilities Integration Development System.” June 24, 2003.

CJCSI 3170.01D. “Joint Capabilities Integration Development System.” March 12, 2004.

CJCSI 3170.01A. “Joint Capabilities Integration Development System.” March 12, 2004.

Dillard, John T. Colonel USA (Ret). *Centralized Control of Defense Acquisition Programs: A Comparative Review of the Framework from 1987–2003*. Monterey, CA: Naval Postgraduate School, DATE. NPS-GSBPP-03-003.

DoD Directive 4630.5. “Interoperability and Supportability of Information Technology (IT) and National Security Systems (NSS).” January 11, 2002.

DoD Directive 5000.1. “The Defense Acquisition System.” October 23, 2000 (canceled).

DoD Directive 5000.1. “The Defense Acquisition System.” May 12, 2003.

DoD Instruction 5000.2. “Operation of the Defense Acquisition System.” May 12, 2003.

DoD 5025.1-M. “DoD Directives System Procedures.” current edition.

Eaton, Donald. RADM USN (Ret). *Conversations on Acquisition Logistics*, July 1994 to present.

Federal Acquisition Regulation (FAR). current edition.

Forsberg, Kevin, M. Mooz, and H. Cotterham. *Visualizing Project Management*, 2d ed. New York: Wiley, 2000.

Locher, James R. III. *Victory on the Potomac*. College Station, TX: Texas A&M Press, 2002.



Myers, General Richard B. Chairmen of the Joint Chiefs of Staff. *National Military Strategy of the United States of America 2004*. Washington, D.C.: Joint Chiefs of Staff, 2004.

“New JCIDS Functional Capabilities Board” *Inside the Pentagon* (October 8, 2004):  
quoted in the *Early Bird* 08/11/04.

Packard Commission. *A Quest for Excellence, Final Report to the President*.  
Washington, D.C.: Executive Branch, 1986.

Irwin, Sandra, “Pentagon Takes Another Shot at Enforcing Joint Thinking,” *National Defense* (AUG 04): quoted in the *Early Bird*, 28 JUL 04

“The Pentagon Power Game” PBS Video (1987).



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